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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,731	01/24/2002	Jim Janesick	01901071	3160
25700	7590	11/03/2004	EXAMINER	
FARJAMI & FARJAMI LLP 26522 LA ALAMEDA AVENUE, SUITE 360 MISSION VIEJO, CA 92691			DICKEY, THOMAS L	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/057,731

Applicant(s)

JANESICK, JIM

Examiner

Thomas L Dickey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 and 58-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 and 58-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

1. The amendment filed 09/20/2004 has been entered.

### ***Information Disclosure Statement***

2. If applicant is aware of any relevant prior art, he/she requested to cite it on form **PTO-1449** in accordance with the guidelines set forth in M.P.E.P. 609.

### ***Drawings***

3. The drawings remain objected to by the PTO Draftsperson for the reasons noted on the Notice of Draftsperson's Patent Drawing Review, form PTO-948 attached to the paper mailed 07/08/2003. A copy of said Notice has been printed out from the File Record and is attached hereto. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application for the reasons set forth in said notice. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to this Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-34 and 58-71 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. These claims are directed to combinations that include an element referred to as a "Pinned Transfer Gate," that is tied to the potential of a substrate. It is not known in the art how to make and use a "Pinned Transfer Gate," nor has Applicant sufficiently explained how to do so. In particular, Applicant has not shown, nor is it known to the art, how to tie the "Pinned Transfer Gate" to the potential of the substrate.

In the context, not of an imager but rather of a charge transfer device, Hynecek 4,994,875 discloses a "virtual transfer gate" wherein a "virtual electrode" prevents electrons from transferring until the voltage on an insulated "conductive electrode" reaches a critical negative voltage. Hynecek's "virtual electrode" is a P type region which is connected to the voltage of a substrate by virtue of being in electrical contact with P+ type channel stops which are in turn in electrical contact with the substrate.

Also in the charge transfer device art is the teaching of Janesick 5,077,592, which discloses an "open pinned-phase region" comprising a concentrated but very shallow implant of P-type dopant (B) in an n-channel 10, which connects the surface potential to the voltage of a substrate and acts as a virtual gate.

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Would it be possible for one to make the element Applicant identifies as a "Pinned Transfer Gate" by following the teachings of Hynecek 4,994,875 or Janesick 5,077,592? In either of these two cases, Applicant should say so. If one skilled in the art could make the "Pinned Transfer Gate" and tie it to the voltage of a substrate by following some other teaching, Applicant should identify that teaching.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 5-8 are rejected under 35 U.S.C. 102(e) as being anticipated by TSU-NAI (6,603,144).

Tsunai discloses an imager cell including a substrate 12 having a potential, the imager cell comprising a photoreceptor comprising a photodiode 7-16, a sense node 5, and a pinned transfer gate 17-15 comprising a p-doped pinned region 17 in an n-doped transfer region 15 disposed between the photoreceptor 7-16 and the sense node 5, the pinned transfer gate 17-15 being tied to the potential of the substrate 12 (by virtue of p-type photodiode channel stopper 6, note figure 1, forming an ohmic connection between p-doped pinned region 17 and substrate 12) and further being configured to transfer charge (through n-doped transfer re-

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gion 15) between the photoreceptor 7-16 and the sense node 5, wherein a voltage (note the voltage trace in figure 6b) determined by the charge transferred between the photoreceptor (photodiode 7-16) and the sense node 5 is read out (via readout gate 3) at the sense node 5. Note figures 1, 2a, 2b, 4, 5a, 5b, 6a, and 6b and column 4 lines 39-51 of Tsunai. Note the contrast between the pinned transfer gate 15-17 in figure 2a and the ordinary gated transfer gate equipped with "shutter gate" 34, shown in Tsunai's prior art at figure 9a.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-34 and 58-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over TSUNAI (6,603,144).

Tsunai discloses an imager cell including a substrate 12 having a potential, the imager cell comprising a photoreceptor comprising a photodiode 7-16, a sense node 5, and a pinned transfer gate 17-15 comprising a p-doped pinned region 17 in an n-doped transfer region 15 disposed between the photoreceptor 7-16 and the sense node 5, the pinned transfer gate 17-15 being tied to the potential of the substrate 12 (by virtue of p-type photodiode channel stopper 6, note figure 1, forming a ohmic connection between p-doped pinned region 17 and substrate 12) and further being configured to transfer charge (through n-doped transfer re-

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gion 15) between the photoreceptor 7-16 and the sense node 5, wherein a voltage (note the voltage trace in figure 6b) determined by the charge transferred between the photoreceptor (photodiode 7-16) and the sense node 5 is read out (via readout gate 3) at the sense node 5. Note figures 1,2a, 2b, 4, 5a, 5b, 6a, and 6b and column 4 lines 39-51 of Tsunai. Thus Tsunai discloses an imager cell having all the elements of claim 1. By Applicant's express admission, claims 2-34 and 58-71 are obvious over the combination of these elements. See Applicant's Paper #8 filed on 4/29/03, page 7.

### ***Response to Arguments***

7. Applicant's amendments have required a new ground of rejection (albeit based on the same reference) Applicant's arguments with respect to claims 1-34 and 58-71 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**TLD**  
**10/04**

  
**Minhloan Tran**  
**Primary Examiner**  
**Art Unit 2826**